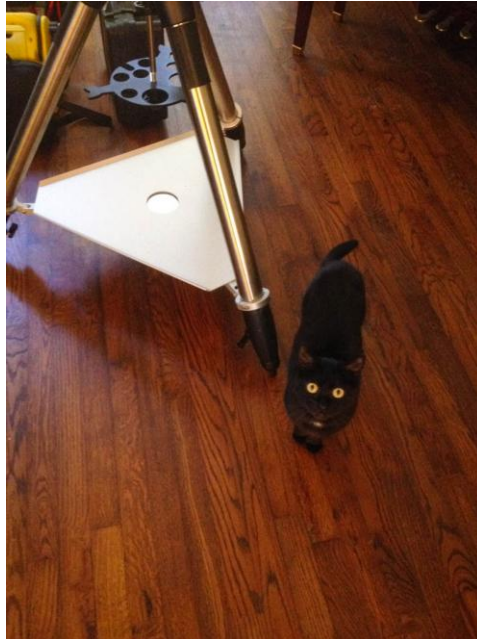


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Chasing Supernovae with Uncle Rod, the Atlas, and a TPI Spreader



Your old Unk has finally solved a difficult riddle, muchachos. No, *not* “How many licks does it take to get to the Tootsie Roll center of a Tootsie Pop?” That’s a puzzle only Mr. Owl could solve (for he is the wisest of us all). But I *have* discovered how to deal with these consarned modern telescope tripods.

In some ways, today’s tripods are purty good. Particularly the ubiquitous Chinese 2-inch diameter steel legged jobs. Sadly, however, almost all of them have a weak link. *Their spreaders are just pitiful.* Small plastic or metal dealies that don’t do their job. Oh, they hold the legs apart, but they do little to help stabilize the tripod, which should be a major function of a tripod spreader.

They not only don’t help strengthen the tripod, those that also serve as accessory trays are way too small, and some, like Celestron’s spreaders, don’t incorporate accessory trays into their design at all. I don’t want to put eyepieces on an accessory tray (because of dew), but I do want a place, a shelf, for the mount power supply, the DewBuster power supply, batteries, the DewBuster controller, and stuff like that.

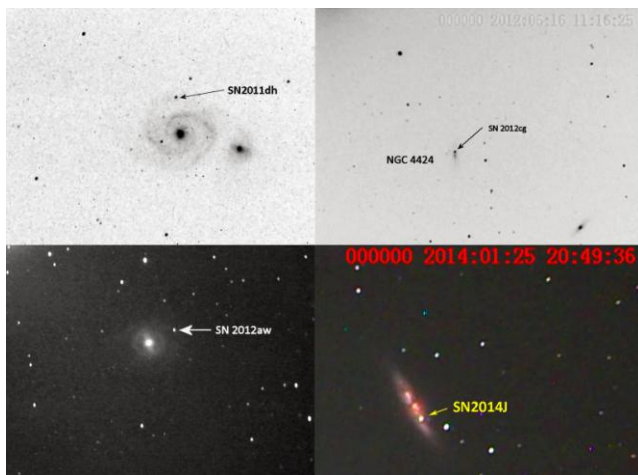
A couple of years back, I thought salvation was at hand. Orion (Telescope and Binocular Center) began advertising a larger accessory tray/spreader for the Synta mounts including the EQ-6 (Atlas). It seemed a little pricey for something that looked on the cheaply made side, 50 bucks, but it resembled the big spreader (no longer

available) my buddy Joe bought for his CG5 years ago. That spreader enabled his mount to handle a C11 tube far better than I would have thought possible. I'd been on the lookout for something similar for years, and thought I had found it. I didn't really need to improve my CG5 and VX tripods, since those mounts are light and I only put C8s or lighter scopes on 'em. The Atlas was another story.

With the Atlas/EQ-6, the tripod is indeed the weak link. The mount is inherently sturdy and capable, but the big, heavy GEM head is too much for the tripod, mainly because the small Synta spreader doesn't do its job. Don't get me wrong the tripod's stability is not *crazy* bad, but it is bad enough that it doesn't allow the mount to live up to its full potential, especially with heavier OTAs. So off to Orion went my credit card number.

Alas, I reckon I didn't read the fine print. When the thing arrived, I found it wasn't *really* a spreader. It was just a larger accessory tray you bolted onto the original, small spreader that comes with the Synta tripods. It did provide more room for my stuff, and that was cool, but it did nothing to improve stability. It's been relegated to the CG5 and VX and is nice enough on those mounts.

After that, I purty much gave up on the idea of strengthening the Atlas' tripod. Oh, I occasionally thought about fabricating something from plywood, but y'all know how dangerous I am with a hammer and nails. And there things stood till I got an email from **Dave Yates**, the owner and head honcho of TPI, [Telescope Performance Improvements](#). He told me he had a product that would fix all my tripod woes.



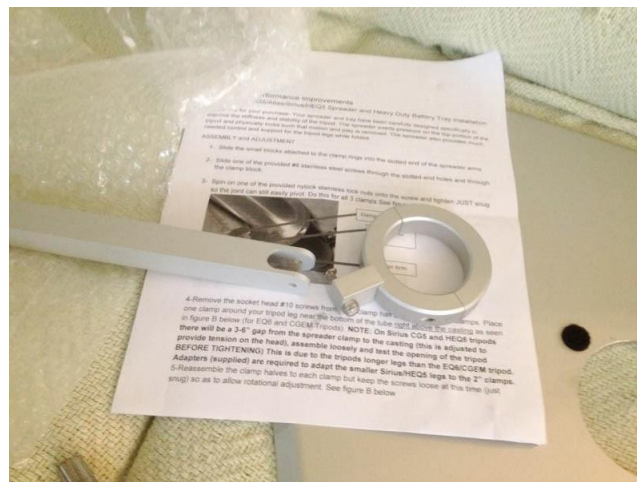
We'll try out Dave's spreader/tray shortly, but first let's talk supernovae. I've long been fascinated by those cosmic critters, giant suns or the white dwarf members of binary systems that pop off like firecrackers in titanic explosions, outshining their host galaxies for a time. When I found how easy it was to image distant supernovae with the Mallincam Xtreme, I made a little hobby of collecting pictures of these stellar cataclysms. Or I did till the last year's weather shut that and almost all my other observing activities down. Thank the weather gods that that *may* be slowly changing now. At least I was able to get out and snap the portrait of the recent supernova in M82.

Supernovae are not rare; there's one shining in some galaxy visible with amateur scopes and cameras almost all the time. One in a bright Messier galaxy is not as common, however, since there are far fewer Messier galaxies than NGC galaxies, for example. Nevertheless, we've had good ones in M65, M101, M51, and M82 in recent times. I enjoyed the fireworks in M82, one of the brightest and most photogenic of the Messier island universes, and figured that would be it for a while. Imagine my surprise, then, to learn one had gone off in magnitude 9.9 M99 in Coma Berenices while M82's guest star was still blazing away.

One of my main goals when I was down in Chiefland last week was imaging the new supernova, but as you heard last time, I didn't image pea-turkey. I didn't see a cotton-picking thing down south. It didn't look like the clouds would break any time soon back home, either. Nevertheless, we got a short interval of clear sky last Saturday evening. Which was cool, since that coincided with the M99 supernova, SN2014L, having brightened to around magnitude 14. Shortly after its discovery, it was somewhat dimmer than magnitude 16, which would still have been duck soup for the Mallincam Xtreme, but the brighter the better, right?

There was another item on my agenda. Not long ago, I had the Atlas out to the dark site to see if its goto might be good enough to encourage me to move the NexStar 11's OTA to it. It had to be precise enough to allow me to do my crazy "hundred objects a night" video runs when I am on what Miss Dorothy calls one of my "deep sky tears." I was pretty sure [EQMOD](#) could provide that precision. But I was unable to get it to work that night.

Even though I had little doubt I could get EQMOD going, I decided I wasn't ready to give up the convenience of the Big Bertha's fork mount in alt-azimuth mode. I'll leave her on the fork for now and seek a case that makes her easier to tote around. Nevertheless, I wanted to get EQMOD working. I have used the Atlas and EQMOD for all my DSLR imaging, and want to continue doing that.



Saturday afternoon, I cabled up the laptop and the Atlas and set about troubleshooting. What I concluded was that it was mostly a configuration problem. While I had installed EQMOD on my new Toshiba Satellite laptop, I had never used it and had not completely set it up. I believed there may have been a power problem contributing to my lack of success, too, since I mistakenly used a suspect cable instead of the good one I got from Scopestuff some time back. Anyhoo, I was able to get EQMOD going in the dining room without a hitch.

Since I'd be using the Atlas Saturday evening, it seemed the perfect time to get the TPI spreader and equipment shelf out of their box and on the Atlas tripod. The TPI stuff had arrived some time before, but my return from Chiefland had coincided with me coming down with a nasty cold and I hadn't felt like doing a pea-picking thing for days.

If there's a criticism I can level against the TPI gear, it's that you might feel funny attaching an Astro-Physics/Takahashi quality piece of kit to your plebeian Synta tripod. But that's OK. The Atlas is really a quality mount and deserves quality accessories and the TPI stuff sure is that. The spreader is made of lovely CNC machined aluminum, and the accessory tray is also very beautifully made. There's a nice sheaf of instructions, but they are almost unnecessary. Installation consists of bolting the tripod clamp rings to the spreader and then clamping each of the three rings to the tripod legs. Everything is precisely made and fastened with stainless steel hardware. I got 'er done in about 10-minutes.

How much would the spreader help? Only a good long session under the stars with the Atlas would tell the tale, but when I applied torsional stress to the legs, I could already see the tripod was sturdier. With the spreader extended (it folds to allow you to collapse the tripod as per normal), I attached the accessory shelf, which took all of ten seconds thanks to a nice knob-headed bolt that fastens tray to spreader with a small clamp.

As the afternoon grew older, it was time to load up. I could have snapped M99 with my Meade DSI or even the ZWO camera, but the galaxy wouldn't be high enough to fool with until close to 10 p.m., so I packed a full load of video gear in addition to the Atlas and my Edge 800 OTA, Mrs. Peel. While I was waiting for the supernova, I'd do a Mallincam run, with the intention of getting some pix for a book I am working on. I've returned to a project I started in 2009. [That summer](#), I got plenty of deep sky video images for what I was calling "Uncle Rod's SCT 100," but the pix were done with my old black and white Stellacam and were none too pretty. While I plan to have plenty of genu-wine CCD images (and drawings) in the book, I want video images there, too, since they sometimes do a better job of showing what a deep sky object looks like to the eye than a CCD picture does.

I thought I'd get some of those pictures on this night—if I got anything. Wouldn't you know it? As 4 p.m. came, so did clouds. Also, while I was mostly over my Bad Cold, I wasn't completely over it and didn't feel at the top of my game. Still, the Weather

Channel, Clear Sky Clocks, and Scope Nights were all insisting on “clear,” so I pushed on.



As my departure time, 4:45 p.m., approached, the clouds began to disperse: “Well, I’ll be gull-derned. Clear Sky Clock and Scope Nights got it right for once.” The trip west to the Possum Swamp Astronomical Society Dark Site was uneventful. There was heavy traffic on Airport Boulevard on a Saturday afternoon, but it would almost have been a pleasant drive if I hadn’t suddenly realized I’d forgot a critical piece of gear.

Rut-roh. As I’d been tooling along listening to Classic Album Rock on the Sirius XM, it came to me that I’d left my little Orion StarShoot DVR sitting in the dining room. What to do? Without it, I wouldn’t be able to record any of my video and would have nothing to show for it even if I captured the supernova. On the other hand, I was now about halfway to the site and had no desire to turn around and re-navigate the traffic that was filling Airport Boulevard as Possum Swampers began to flock to the restaurants, clubs, and the Mall on Saturday P.M.

What would I do? What *would* I do? I’d have to forget collecting images for the SCT 100. If I got the supernova in M99 onscreen, I could probably snap a screenshot with my iPhone. It wouldn’t be great, but it might be OK. I’d devote the evening to testing EQMOD and the TPI spreader. Sigh. I have learned my lesson, y’all. Running the gear load-out by a checklist has meant I haven’t forgotten anything major for a star party trip in a long time. I herewith pledge to start using the same checklist for my at-home dark site runs.

At that dark site, I was once again not surprised to be all by my lonesome—I wasn’t even visited by the airstrip’s friendly tomcat. There was a bright Moon flying high and most of my PSAS compadres probably didn’t think it would be a very deep sky friendly evening. In a way, it was probably good I was alone. I was P.O.ed (“put out,” y’all; this is a family-friendly blog) about having forgotten the DVR, and it felt like my cold was getting worse, not better. I tried to film a little video of gear set up with my iPhone, but that was scotched by the first of my many coughing fits. To put in succinctly, your old Unk was in a **MOOD**.



Despite that, set up went smoothly; the TPI spreader didn't cause any heartburn at all. Push down on the spreader to open the tripod, position the shelf, fiddle with its clamp for five seconds, and I was done. On the tripod went the Atlas GEM head, the counterweight, and the Edge 800 and I was done save for mounting the camera and cabling everything up. How was I feeling when I was done? *Not so hot*sky. I was warm enough in a sweater and a light nylon jacket—maybe too warm. There was little doubt in my formerly military mind I should have stayed home and would have if'n I'd had good sense. “Oh, well, good thing I *don't* have good sense.”

With the computer fired up, a serial cable connected between it and the Atlas, and the Mallincam Xtreme ready to go, my next task was polar alignment. The current SynScan HC has a built-in polar alignment routine identical to the AllStar Polar Alignment in the company's Celestron branded mounts' NexStar HCs. EQMOD goes about polar alignment differently, however.

First you set a “polar home” position by rotating the mount in RA with the wireless game pad that serves as EQMOD's hand control until the marker on the polar scope reticle where Polaris goes is on the bottom. Then, you mash a button on EQMOD to tell it you are ready to polar align. Using the date and time in the laptop for reference, EQMOD moves the mount in RA till the reticle is precisely positioned. Use the altitude and azimuth adjusters to place Polaris in the little circle on the reticle and that is it. It's not as gee-whiz as AllStar, but I find the polar alignments it produces to be very good indeed.

Once I had Polaris properly positioned, I parked the Atlas to Home Position and waited for a few more alignment stars to wink on. When there was a sufficient quantity, I brought up *Cartes du Ciel's* all-sky display and sent the mount to three stars, syncing on each one. I picked a star in the northeast, one in the northwest, and one in the

southwest to allow EQMOD to build a good pointing model. EQMOD seemed to be going great guns. The final star was on the screen of the portable DVD player I use as a video display when the slew stopped. I positioned it dead in the middle of the crosshairs I'd put on the screen with the Mallincam software and alignment was complete.

Alrighty, then. Target One. I clicked on Lepus' globular cluster, M79, on Cartes' screen, mashed the program's "slew to" button, and away the Atlas and Mrs. Peel went. When the goto was done, the little glob was dang near dead center. I had forgotten how bright having a Moon in the sky will make the background in Mallincam images, but a little playing with gamma and gain settings reduced this annoyance to a bearable level. With a surprisingly good-looking M79 onscreen, I thought it would be a good time to evaluate the TPI spreader's effectiveness.



As I was focusing up on M79's teeny-tiny stars, I noted a distinct absence of **The Shakes** in 2-second exposures. The Atlas and a C8 are quite steady even without a TPI, but I can always generate star trails by tweaking focus. With the TPI in place? No Shakes. Just round stars as I focused. OK, *Mr. Smarty Pants*. Let's see how you like *this*. I fetched Mrs. Peel a good whack on her rear cell. Hated to do it, but this was SCIENCE. The result? Amazingly, still no star trails. Folks, I don't want to overdo it, but *if you own an Atlas, you want the TPI spreader*. It just makes a difference.

You probably want the TPI accessory tray, too. Even if, unlike Unk, you don't feel the need for a place to stash stuff, I believe loading it down with your jump-start batteries like I did on this night also adds to the steadiness of the set up. Sorta like the old trick we used to do with too light mounts and tripods: hang a water-filled milk jug from the tripod head.

Up to this point, everything had gone sweet. **Real sweet.** Which got me suspicious. Everything going so smooth just don't spell "Unk Rod observing run." I wasn't suspicious for long, though. After I was done with M79 things began to go south in a hurry. Oh, a trip to NGC 457, the E.T. Cluster, was a success, but when I clicked on and slewed to M110 in the west, the scope landed on an empty star field.

No problemo. I'd only aligned on three stars, and EMOD allows you to align on as many as you like, meaning go-to accuracy is never a problem. Usually, three is enough, but if not, another star in the area of the target always fixes things. Not this time. I still couldn't get to M32. I also noticed the cursor on the computer screen that indicates the scope's position wasn't on M32 either. What the—? As a test, I used the joystick to place the screen cursor on M32. When I did, it immediately showed onscreen. What the heck was going on?

OK...I headed back east to see if the problem was evident there, too. M79 had been centered after a go-to slew. How about M42? Missed it by several fields. "Hmm...guess I'll sync on Rigel." I clicked on Rigel and mashed the slew button. The slew started, and then abruptly stopped halfway to the star. Nothing I could do would get the mount moving again. I threw the big switch.

What was the fraking difficulty? Could be the serial cable. Or perhaps the EQDIR module, the little widget plugged between that cable and the computer that translates between RS-232 speak on the computer end and TTL speak on the mount end. It was certainly old enough; I'd got it shortly after I purchased the mount in ought-seven.



The good thing, though, was that I had a nice troubleshooting tool available, the SynScan HC. Using it should tell me whether my problem lay with the mount or with

EQMOD. Plugged it in and after a little fumbling—the SynScan is *just* different enough from the NexStar hand control to give me fits—got the basic data plugged in and began a three-star alignment.

Which didn't start well. Even with a good polar alignment, I don't expect the first alignment star to be dead in the finder cross-hairs, not unless I take undue pains with a bubble level to precisely place the Atlas in Home Position—which I don't do. But I don't expect star one to be much more than a couple of degrees off. Sirius was several times that. I centered it up, however, and continued to star two. Or tried to. The mount came to a halt not far from Sirius.

Shortly thereafter, the HC spontaneously rebooted itself. Well, now, what in *tarnation* was going on? Didn't know what else to do other than the good old “once more with feeling.” Was something hosed up with the Atlas' motor control board? I was feeling awful unhappy till I noticed something as the mount was slewing to Sirius again: the Atlas' power light was blinking. That is an indication of a low power condition. I knew the battery was good, so that left the power cable or connectors. I was using a known good power cable, since I'd suspected that as a cause of my problems the previous time out with the mount. I killed the power, unplugged the cable and reseated it.

One last time. *This* time the mount stopped about half a degree from Sirius. Star two was closer, and star three was nearly centered in the reticle of Mrs. Peel's Rigel Quick Finder. No more light-blinking, either; I observed the pilot light carefully during the slews.

I am thinking a little strain relief for the power cable provided by some Velcro might be all that's needed. As the mount rotates in RA, the power cable tends to snag on the HC connector that is adjacent to it. If that don't get it, a little TLC on the mount-side connector should get me going again. I will do something about it shortly, anyhow, and hope to get Atlas back out on the field before it's time for [this year's M13 picture](#), at least.

That was for another night, though. On *this* night, Unk's powers were rapidly waning. I was coughing my lungs out, and was again feeling too warm in my light jacket. Fever? Prob'ly. Should I wait another hour for M99? “I don't *theenk* so.” I had well and truly reached my infamous *I Have Had Enough* limit. I packed up as quickly as I could and boogied for Chaos Manor South.



Back at the Old Manse, what was left of the evening provided a more pleasant denouement. Starting with **Svengoolie**. That friendly goober of a horror host was showing *King Kong versus Godzilla*, which Unk first thrilled to in the summer of '62 during a family vacation in New Orleans (Mama loved its nuclear war tropes; Daddy thought a nuclear war might be preferable to watching this poorly dubbed "masterpiece."). Of course, there was also that bottle of Yell I'd brought back from Chiefland. It soothed my poor burning throat, or at least got me to the point where I didn't much care about it.

On the face of it, Saturday night's run had been an almost complete bust, *muchachos*. Didn't get the Atlas working right, didn't see the supernova. BUT...at least I'd determined the source of the mount's problems. And I had had the pleasure of seeing what the TPI spreader could do to kick my humble Atlas up a notch or three. Sipping the beloved elixir, watching my fave giant lizard melt all them toy tanks, I decided the evening hadn't been such a bust after all. Amateur astronomy ain't always about your successes; it's also about your failures—the ones that teach you something, anyway.

Nota Bene: I'd been told famous amateur astrophotographer **Evered Kreimer** had died at age 93. Luckily, that turned out not to be so. Sadly, however, we definitely lost another astronomy giant recently, **Jean Texereau**, 95, a master optician who figured and refigured countless observatory telescopes. What makes him famous among amateurs, however, is his 1951 book, *How to Make a Telescope*. If you've had even the briefest of flirtations with ATMing, you've heard of it.

Next Time: The Case Conundrum...

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